

# Managing Risk in Today's Agricultural Environment

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What sources of risk are you most concerned about today?

- Production/technical risk
- Marketing and price risk
- Financial risk
- Institutional risk
- Legal risk
- Personal and human risk

## Thinking about Risk

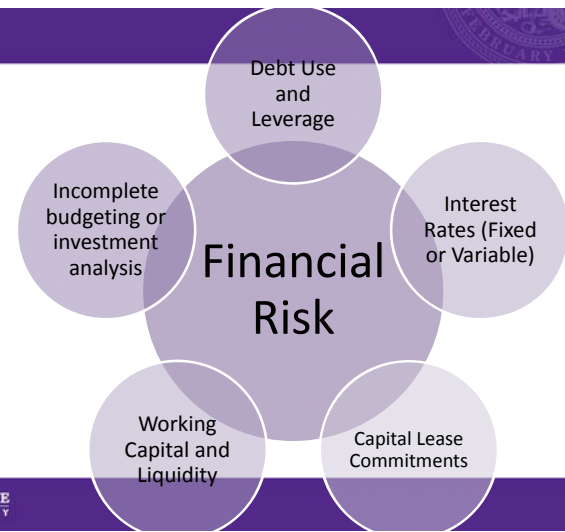
- Risk can be difficult to discuss
  - Overconfidence in forecasts and ability to influence events
  - Challenging to assess range of possible outcomes
- Important to
  - Recognize sources of vulnerability
  - Ways to manage risk
    - Agriculture is in the midst of unprecedented volatility
    - Higher income and increased wealth to protect
    - Lower margins and prices to contend with

## Types of Risk

Business  
Risk

Financial  
Risk

Strategic  
Risk



**Strategic Positioning Risk**

- Accurate Assessment of External Forces and Internal Resources/Capabilities
- Proper Alignment of Resources and Capabilities to External Forces
- Proper Implementation of Strategy
- Realigning Strategy to Changing External Forces and Resources/Capabilities

**Strategic Risk**

**External Forces**

- Business/Economic Climate
- Competitor Actions
- Customer Preferences

**Internal Resources & Capabilities**

- Physical
- Financial
- Customer
- Employee/Supplier
- Organizational

**Potential Loss Exposures**





## The Paradox of Uncertainty

- Uncertainty Creates Risk (Loss Exposures)  
**BUT**
- Uncertainty Creates Opportunities



## The Fundamental Challenge

- Minimize the Downside
- Capture the Upside



## Vulnerabilities to Continued Prosperity

- Margin Compression
- Weak Working Capital Positions
- Excess and/or Poorly Structured Debt
- Asset Value Declines
- Availability of Credit
- Increased Tax Burdens/Reduced Preferences



## Strategies To Use In This Environment

- Be a Low-cost Producer
- Protect Working Capital
- Lock in Margins
- Buy Crop Insurance
- Consider Fixing some Interest Rates
- De-leverage - Pay Down Debt

## Strategies To Use In This Environment

(cont'd)

- Hold Financial Reserves
- Increase Asset Utilization
- Conservative Bidding & Buying
- Slow Growth & Fund with Equity
- Make Investments in Operational Excellence

## Changing Business Climate in Agriculture

- Crop agriculture continuing to transition out of an extraordinarily profitable era
- Long-run future in crop agriculture is still bright, but the next several years will test managerial skills
- Aggressively manage all input costs
- Look for both cash rents and land prices to adjust downward the next several years
- Livestock sector facing extremely tight margins

How many acres do you anticipate planting in  
2016?

- 4,000 or greater
- 3,000 - 3,999
- 2,000 - 2,999
- 1,000 - 1,999
- 1 - 999
- None

What is your total cost of production for corn  
on a per bushel basis? (Include all costs not  
just variable costs)

- More than \$4.50
- \$4.00 - \$4.49
- \$3.50 - \$3.99
- \$3.00 - \$3.49
- Less than \$3.00
- Don't know

## Budgeting for \$3.75 corn

CBOT:ZCZ2016, D 3824.00 (0%) Q:3826 H:3867 L:3824 C:3824



CME Group  
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Table 1. 2016 Budgets for Central Illinois Farmland with Lower Productivity

	2016 Budgets <sup>1</sup>		With 5100 of Cuts <sup>1</sup>	
	Com	Soybeans	Com	Soybeans
Yield per acre	104	53	104	53
Price per bu	\$4.00	\$9.25	\$4.00	\$9.25
Crop revenue	\$736	\$490	\$736	\$490
ABCRLC	20	10	20	10
Crop insurance proceeds	0	0	0	0
<b>Gross revenue</b>	<b>\$756</b>	<b>\$500</b>	<b>\$756</b>	<b>\$500</b>
Fertilizers	\$120	\$39	\$120	\$29
Pesticides	60	40	60	40
Seed	120	78	110	60
Drying	18	1	18	1
Storage	5	4	5	4
Crop insurance	2	10	2	10
<b>Total direct costs</b>	<b>\$325</b>	<b>\$190</b>	<b>\$347</b>	<b>\$192</b>
Machine hire/lease	\$13	\$9	\$13	\$9
Utilities	5	4	5	4
Machine repair	20	23	20	23
Fuel and oil	20	20	20	20
Light vehicle	2	1	2	1
Mach. depreciation	60	63	48	43
<b>Total power costs</b>	<b>\$136</b>	<b>\$120</b>	<b>\$156</b>	<b>\$100</b>
Hired labor	\$10	\$10	\$10	\$10
Building repair and rent	11	5	11	5
Building depreciation	13	11	13	11
Insurance	10	10	10	10
Misc.	0	0	0	0
Interest (non-land)	35	11	35	11
<b>Total overhead costs</b>	<b>\$275</b>	<b>\$62</b>	<b>\$273</b>	<b>\$69</b>
<b>Total non-land costs</b>	<b>\$506</b>	<b>\$361</b>	<b>\$536</b>	<b>\$311</b>
<b>Operator and land return</b>	<b>\$170</b>	<b>\$139</b>	<b>\$220</b>	<b>\$189</b>
Cash rent	\$236	\$236	\$186	\$186
<b>Net Farmer Income</b>	<b>\$66</b>	<b>\$97</b>	<b>\$34</b>	<b>\$3</b>

<sup>1</sup> The first two columns are from the 2016 Crop Budgets. The final two columns include budgets with \$130 per acre of cost cuts

## Budgeting for \$3.75 corn

COST-RETURN PROJECTION - CENTER PIVOT IRRIGATED CORN - NORTH CENTRAL KANSAS

	Yield Level (bu/acre)			Year
	195	211	231	
<b>INCOME PER ACRE</b>				
A. Yield per acre	195	211	231	
B. Price per bushel	\$ 3.67	\$ 3.67	\$ 3.67	
C. Net government payment	\$ -	\$ -	\$ -	
D. Subsidy payments	\$ -	\$ -	\$ -	
E. Miscellaneous income	\$ -	\$ -	\$ -	
F. Revenue (A x B) + C + D + E	\$ 713.65	\$ 783.37	\$ 847.77	
<b>COSTS PER ACRE</b>				
1. Seed	\$ 118.80	\$ 118.80	\$ 118.80	
2. Fertilizer	36.96	36.96	36.96	
3. Irrigation / Pesticides	16.54	16.54	16.54	
4. Fuel and Oil	173.45	191.19	207.82	
5. Crop Insurance*	15.86	17.43	19.00	
6. Crop Insurance**	25.33	27.69	30.05	
7. Drying	30.00	30.00	30.00	
8. Miscellaneous	157.63	165.72	173.82	
9. Custom Hire / Machinery Expense	18.00	18.00	18.00	
10. Non-machinery Labor	7.50	7.50	7.50	
11. Irrigation	34.00	40.40	46.80	
a. Labor	3.96	4.42	4.88	
b. Fuel and Oil	45.00	47.48	49.96	
c. Repairs and Maintenance	37.00	37.00	37.00	
d. Depreciation on Equipment and Weir	158.00	195.00	232.00	
12. Land Charge / Rent	\$ 522.96	\$ 516.00	\$ 499.17	
13. Interest on Nonland Costs	18.75	18.85	20.52	
<b>G. NET TOTAL</b>	<b>\$ 494.61</b>	<b>\$ 667.51</b>	<b>\$ 668.99</b>	
<b>H. RETURN OVER COSTS (F - G)</b>	<b>\$ 219.04</b>	<b>\$ 166.66</b>	<b>\$ 178.95</b>	
<b>I. RETURN TO ANNUAL COST (F - H)</b>	<b>\$ 4.92</b>	<b>\$ 4.50</b>	<b>\$ 4.47</b>	
<b>K. RETURN TO ANNUAL COST (I - J)</b>	11.03%	14.67%	13.97%	

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COST-RETURN PROJECTION - CENTER PIVOT IRRIGATED CORN - SOUTHWEST KANSAS

	Yield Level (bu/acre)			Year
	176	201	229	
<b>INCOME PER ACRE</b>				
A. Yield per acre	176	201	229	
B. Price per bushel	\$ 4.23	\$ 4.23	\$ 4.23	
C. Net government payment	\$ -	\$ -	\$ -	
D. Subsidy payments	\$ -	\$ -	\$ -	
E. Miscellaneous income	\$ -	\$ -	\$ -	
F. Revenue (A x B) + C + D + E	\$ 732.50	\$ 852.50	\$ 982.50	
<b>COSTS PER ACRE</b>				
1. Seed	\$ 126.72	\$ 126.72	\$ 142.56	
2. Fertilizer	31.00	31.00	31.00	
3. Irrigation / Pesticides	16.54	16.54	16.54	
4. Fuel and Oil	117.52	144.96	172.40	
5. Crop Insurance*	6.50	6.50	6.50	
6. Crop Insurance**	13.60	20.23	26.78	
7. Drying	21.00	21.00	21.00	
8. Miscellaneous	10.00	10.00	10.00	
9. Custom Hire / Machinery Expense	140.50	144.13	148.13	
10. Non-machinery Labor	10.00	10.00	10.00	
11. Irrigation	7.50	7.50	7.50	
a. Labor	63.12	84.49	106.24	
b. Fuel and Oil	3.96	4.42	4.88	
c. Repairs and Maintenance	44.20	44.20	44.20	
d. Depreciation on Equipment and Weir	48.36	48.36	48.36	
e. Interest on Equipment and Weir	40.00	40.00	40.00	
12. Land Charge / Rent	\$ 724.96	\$ 907.66	\$ 1,095.23	
13. Interest on Nonland Costs	18.25	21.00	23.50	
<b>G. NET TOTAL</b>	<b>\$ 471.10</b>	<b>\$ 629.12</b>	<b>\$ 617.19</b>	
<b>H. RETURN OVER COSTS (F - G)</b>	<b>\$ 261.40</b>	<b>\$ 222.00</b>	<b>\$ 111.90</b>	
<b>I. RETURN TO ANNUAL COST (H - A)</b>	<b>\$ 4.95</b>	<b>\$ 4.61</b>	<b>\$ 4.82</b>	
<b>K. RETURN TO ANNUAL COST (I - J)</b>	4.26%	1.67%	1.27%	

\*Rother report see previous page

## What is working capital?

Working Capital =

$$\text{Current Assets} - \text{Current Liabilities}$$

To make it scale neutral, it's best examined as a ratio

$$\frac{\text{Working Capital}}{\text{Gross Revenue}}$$

## How much working capital do you have as a percentage of gross revenue?

- 100% or greater
- 75 - 99%
- 50 - 74%
- 25 - 49%
- Less than 25%
- Don't know

## Today's Scenario

- 3,600 acres corn/soybean operation
- Cash rent 1,800 acres at \$175/acre average
- Purchased 100 acres at \$2,400/acre in 2012
  - 50% financed with debt
- Total Assets = \$2.5 million
- Total Liabilities = \$0.5 million
- Taxable Income in 2015 = \$50,000
- Recently updated machinery lineup

## Additional Information

- Debt to Asset Ratio = 0.2
- Working Capital = \$750,000
- Working Capital to Gross Revenue = 0.7
  
- Anticipate losing \$100/acre this year
  - \$360,000
- Burn rate = 2.08 years

## Wait! How Do I Calculate my Burn Rate?

Working Capital = Current Assets - Current Liabilities

Burn Rate = Working Capital/Net Income Loss

Example: Working Capital = \$500,000

& Net Income Loss = \$200,000

**Burn Rate = \$500,000/\$200,000 = 2.5 years**

## Why should I worry about “burn rate”?

- Working capital is a buffer to absorb short-run losses
- Burn rate helps us visualize how much “buffer capacity” we have
- Burn rate tells us how long we can continue at our current pace before our working capital is exhausted
- Increasing working capital buys time to make improvements



For more information, please contact me at [eyeager@ksu.edu](mailto:eyeager@ksu.edu) or 785-532-4935

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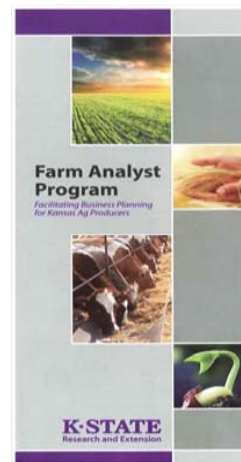
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Date	Topic	Speaker	
February 16, 2016 2:00 pm	Managing Risk in Today's Agricultural Environment	Beth Yeager Assistant Professor, Dept. of Agricultural Economics <a href="mailto:eyeager@ksu.edu">eyeager@ksu.edu</a> 785.532.4935	
March 23, 2016 11:00 am	Kansas Property Tax	Allen Featherstone Professor and Head, Dept. of Agricultural Economics <a href="mailto:afeather@ksu.edu">afeather@ksu.edu</a> 785.532.4441	
April 6, 2016 11:00 am	Kansas Land Values	Mykel Taylor Assistant Professor, Dept. of Agricultural Economics <a href="mailto:mtaylor@ksu.edu">mtaylor@ksu.edu</a> 785.532.3033	

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